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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/528,287      | 03/16/2005  | Masamitsu Kitahashi  | 93928               | 6612             |

24628 7590 09/25/2007  
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| EXAMINER |
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RACHUBA, MAURINA T

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| ART UNIT | PAPER NUMBER |
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3723

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09/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/528,287

Applicant(s)

KITAHASHI ET AL.

Examiner

Maurina Rachuba

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/27/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Applicant's amendment has overcome the claim objections.

### *Claim Rejections - 35 USC § 103*

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 5 and 6 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al, 5,643,061 in view of Mitsuhashi et al, 6,168,684. '061 discloses a polishing apparatus for performing a polishing operation comprising: a polishing plate (column 1, lines 9-17); a chuck **41** for holding a polishing target material to bring the polishing target material into contact with the polishing plate; a head body **40** fixed to a rotary drive shaft, for holding and rotatably driving the chuck; and a retainer ring **49** supported by the head body in a periphery of the chuck, the polishing target material being polished by the polishing plate by a relative motion of the polishing plate and the chuck, characterized in that the polishing apparatus includes: supporting means for supporting the retainer ring and the chuck respectively to the head main body so that the retainer ring and the chuck can be moved in a direction of the rotary drive shaft (the head is rotated and moved up and down to apply the target material to the polishing pad) and in a vertical direction independently from each other (the retaining ring moves relative to the chuck); and means **83, 85, 87, 88** for restricting movements of the retainer ring and the chuck so as to maintain a fluctuation of a gap **71** between the retainer ring and the chuck within a predetermined range during the polishing operation.

'061 discloses the use of a non-abrasive polishing pad, not an abrasive cloth. In a similar apparatus, '684 teaches that it is known to use abrasive cloths in a polishing apparatus to polish target material on a workpiece. Because both references teach apparatus for polishing target materials, it would have been obvious to one skilled in the art to substitute one known polishing tool (a polishing pad used with an abrasive slurry) for another polishing tool (an abrasive polishing cloth) to achieve the predictable result of polishing the target material. Note also that '061 does not disclose the gap range, or the distance range between centers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the claimed gap fluctuation range or range between centers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Here, '061 discloses that the gap fluctuates the distance of the slot pins **87, 88** extend into on the retaining ring **49**. Further, it appears from the drawings that the distance between centers is less than 0.5 mm, as it appears the centers are coincident.

4. Claim 7 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al, 5,643,061 in view of Mitsuhashi et al, 6,168,684 as applied to claim 1 above, and further in view of Kajiwara et al, 6,540,590. '061 as modified by '684 does not disclose that the retaining ring is rotatable with respect to the chuck. '590, in a similar device, column 4, lines 40-45, teaches providing a drive mechanism to rotate the ring with respect to the chuck. It would have been obvious to one of ordinary skill in the art to have provided '061 as modified by '684 with the rotatable ring as taught by '590,

column 4, lines 30-39, to minimize the impact of any variation in the lower surface of the ring on the rate of material removal from the edge of the substrate.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-3 and 5-7 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment has overcome the previous rejection, however, barring further structural limitations to the chuck, ring, and means for restricting movements of the ring and chuck, it is the examiner's position that '061 discloses the claimed invention, as modified by '684 and '590.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurina Rachuba whose telephone number is 571 272 4493. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571 272 4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. Rachuba/  
Primary Examiner  
Art Unit 3723